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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/609,089	06/27/2003	Bill Baggenstoss	MICS:0098	7574

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EXAMINER

MENZ, DOUGLAS M

ART UNIT PAPER NUMBER

2891

DATE MAILED: 11/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/609,089

Applicant(s)

BAGGENSTOSS, BILL

Examiner

Douglas M. Menz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 8-23, 26-36, 58 and 59 is/are pending in the application.
- 4a) Of the above claim(s) 9-19, 27-36, 58 and 59 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8, 20-23 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 and 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Both claims, as amended, disclose that each capacitive element has **a first electrode with an interior portion forming a pair of concentric sidewalls extending perpendicularly from a substrate**. There is insufficient disclosure within the specification to justify these additional limitations.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 3-5, 8, 20-21 and 23, 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Chang (US 6020235).

Regarding claim 1, Chang discloses a plurality of generally elliptical capacitive memory elements (*The shaded region in Fig. 3 which defines the extra capacitor area is oblong with sharp edges, however, physically implementing such a structure would yield a device with rounded edges. Therefore, the examiner concludes that Chang anticipates capacitive memory elements that are **generally** elliptical*), each capacitive memory element having a first electrode (13, Fig. 1a) with an interior portion forming a pair of concentric sidewalls extending perpendicularly from a substrate (*starting from the bottom of 13, Fig. 1a, the electrode makes a symmetrical step upward in opposing horizontal directions thus producing a pair of concentric sidewalls extending perpendicularly from a substrate*)

the plurality of capacitive memory elements disposed on a substrate so that an axis that runs longitudinally through one of the plurality of capacitive memory elements is not generally parallel with an edge of the substrate (Fig. 3 and Col. 2, lines: 50-65).

Regarding claim 2, Chang further discloses wherein the axis is not generally perpendicular with an orthogonal edge of the substrate (Fig. 3 and Col. 2, lines: 50-65).

Regarding claim 4, Chang further discloses wherein the substrate comprises a memory device (Fig. 3 and Col. 1, 34-47).

Regarding claim 5, Chang further discloses wherein the substrate comprises an integrated circuit device (Fig. 3 and Col. 1, lines:7-10).

Regarding claim 8, Chang further discloses wherein each of the plurality of capacitive memory elements is slanted with respect to the edge of the substrate (Fig. 3 and Col. 2, lines: 50-65).

Regarding claim 20, Chang discloses an integrated circuit device, comprising: a memory array that includes a plurality of memory cells disposed on the substrate, the memory array comprising a plurality of capacitive memory elements, each of the capacitive memory elements being associated with one of the plurality of memory cells, each capacitive memory element having a first electrode (13, Fig. 1a) with an interior portion forming a pair of concentric sidewalls extending perpendicularly from the substrate (*starting from the bottom of 13, Fig. 1a, the electrode makes a symmetrical step upward in opposing horizontal directions thus producing a pair of concentric sidewalls extending perpendicularly from a substrate*)

the plurality of capacitive memory elements being disposed on the substrate so that an axis that runs longitudinally through one of the plurality of capacitive memory elements is not generally parallel with an edge of the substrate (Fig. 3 and Col. 2, lines: 50-65).

Regarding claim 21, Chang further discloses wherein the axis is not generally perpendicular with an orthogonal edge of the substrate (Fig. 3 and Col. 2, lines: 50-65).

Regarding claim 23, Chang further discloses wherein the substrate comprises a memory device (Fig. 3 and Col. 1, 34-47).

Regarding claim 26, Chang further discloses wherein each of the plurality of capacitive memory elements is slanted with respect to the edge of the substrate (Fig. 3 and Col. 2, lines: 50-65).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang (US 6020235) in view of Momohara (US 6055655).

Regarding claims 3 and 22, Chang discloses the structure of claims 1 and 20 as mentioned above, however, Chang does not explicitly disclose wherein the substrate comprises a processor.

Momohara discloses a system-on-silicon i.e. processor and memory on the same substrate (Figs. 1a-b and Col. 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Chang's memory structure into Momohara's system on a chip for the purpose of reducing the size and cost as taught by Momohara (Col. 1).

Response to Arguments

Applicant's arguments filed 11/7/05 have been fully considered but they are not persuasive. Applicant's entire argument is based upon the amended claim language of claims 1 and 20 i.e. the additional limitation "each capacitive memory element having a first electrode with an interior portion forming a pair of concentric sidewalls extending perpendicularly from the substrate".

First, this additional limitation has no support given within the original disclosure and is therefore considered **new matter**, as mentioned above.

Secondly, it has been shown above, that the Chang reference does in fact disclose the additional limitation. As seen in Fig. 1a, the electrode 13 has an interior portion forming a pair of concentric sidewalls extending perpendicularly from the substrate because of the step formation of the electrode 13. Also note that Fig. 1a is a cross-section view of DRAM cell along section A-A' of Fig. 3 and, as Applicant has

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mentioned, Chang refers to the electrode structure as shell shaped. This further supports the position that the capacitive memory element of Chang's structure is generally elliptical because the cross-section view of a clamped shell taken in the orthogonal plane parallel to the top view of Fig. 3 would yield a generally elliptical shape.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas M. Menz whose telephone number is 571-272-1877. The examiner can normally be reached on M-F 8-5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Baumeister can be reached on 571-272-1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DM



CHRISTIAN D. WILSON
PRIMARY EXAMINER